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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,110	09/09/2003	Louis K. Arata	MAKO 2 00025	9945

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FAY SHARPE LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OH 44114

EXAMINER

LAMPRECHT, JOEL

ART UNIT	PAPER NUMBER
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3737

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/658,110

Applicant(s)

ARATA, LOUIS K.

Examiner

Joel M. Lamprecht

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/9/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/30/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/15/2004, 10/11/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-13 and 15-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Grzeszczuk et al (US 2002/0077543). Grzeszczuk et al teach displaying information during an interventional procedure comprising scanning a patient [0010], determining the position of a patient tracker [0012]-[0013] and [0038]-[0040], determining a transform between the patient tracker and images to find a relationship [0013-0014] and [0016] and [0038]-[0040] [0046]-[0048] between the patient tracker and scanner images. They also disclose determining a relationship between an instrument and a patient tracker and calculating a transform between the instrument and scanner images based on a relationship between the instrument and the patient tracker and the transform between the patient tracker and the scanner images ([0035] [0038] [0041] and as listed above), and display an updated position of the instrument on a scanner image based on the transform between the instrument and the scanner images [0041].

Regarding Claims 2-5 Grzeszczuk et al disclose calculating the transforms disclosed in ([0046], [0010], [0011], [0013], [0038], [0040]; also refer to Figure 1 for an image of the system).

Regarding Claim 6 Grzeszczuk et al disclose a coordinate system [0012], the methods of Claim 1 as listed above, a calibration process [0038]-[0044] and [0045]-[0050], and a fiducial based system [0052]-[0053].

Regarding Claims 7-12 see Figure 1, [0035], [0036] where Grzeszczuk et al teach a scanner operable to scan at least a portion of an anatomy of a patient to acquire a plurality of scanner images of said portion of said anatomy ([0010] and Figure 1); a tracking system operable to detect a position of said patient (Figure 1 and (Col 4 Line 21-40); an image guided interventional system

Regarding Claim 13 Grzeszczuk et al disclose an instrument tracker in [0035].

Regarding Claims 15-17, Grzeszczuk et al disclose an invasive and non-invasive tracker [0014]-[0015] and a scanner tracker [0046].

Additionally, Grzeszczuk et al inherently teaches a computer readable medium for performing the aforementioned functions in ([0018], [0031] [0033]) where the functions of scanning, and tracking for position are listed on ([0036], [0063], [0024]-[0029]).

Regarding Claims 24 and 25 Grzeszczuk et al teach scanning a patient, displaying relative to the anatomy of that patient, the position of an instrument, and updating the position of said instrument without acquiring additional scanner images (in Claim 1, [0028], [0035], [0013], [0027], and as disclosed above). They also disclose

registering the images as described above which requires the determination of spatial relationships, transforms, and optionally a fiducial-based system [0052].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grzeszczuk et al in view of Kienzle et al (US 6697664). Grzeszczuk et al disclose all the limitations of Claims 1 and 7, but do not disclose a patient tracker mounted on a table. Attention is then directed to the secondary reference in the same field of endeavor by Kienzle et al, which discloses a patient tracker coupled with an imaging system that is mounted on a table for the purpose of enabling a surgeon to single-handedly plan out and perform a surgical procedure without risk of miscommunication between the surgeon and a separate device operator (Figure 1, Figure 6, Background Col 2 Line 48-57, and finally Col 4 Line 10-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use the system of Kienzle and Lea in the invention by Grzeszczuk et al in order to allow for accurate surgical planning and reduce the rate of error inside of the operating room as written in Kienzle (Background).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Katznelson et al. (US 6490473) discloses many, if not all the Claims as written. Additionally, Bova et al (US 6,546,279) seems to also disclose a majority of the processor/computer medium-based aspects of the Applicant's invention, and is particularly relevant. One final reference not relied upon, but particularly relevant is by Ryan, et al., Frameless Sterotaxy with Real-Time Tracking of Patient Head Movement and Retrospective Patient-Image Registration, Proceedings of the Second Annual International Symposium on Medical Robotics and Computer Assisted Surgery, Baltimore, Md, Nov. 4-7, 1995.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joel M. Lamprecht whose telephone number is (571) 272-3250. The examiner can normally be reached on Monday-Friday 7:30AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3737

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JML
10/5/2006


ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER